REED CREEK WATERSHED AND FISHERY IMPROVEMENT PROJECT

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In response to several concerns by Trout Unlimited, U.S. Forest Service specialists evaluated watershed conditions within the Reed Creek watershed in the Chattooga River drainage about 20 miles northeast of Clayton, Georgia. Problems identified in a Water Resource Inventory included excessive sedimentation in Reed Creek and the associated reduction in fishery habitat.

Sedimentation was due to a combination of road problems within the watershed. Erosion was excessive from several types of roads with a long history of public use and poor maintenance. Some roads have apparent prescriptive rights that make them difficult to close because of historic use. Maintenance is difficult and costly because the right of way associated with them is very narrow and long term erosion has often embedded or entrenched them into the landscape making proper surface drainage expensive.

Another road related problem is poor location and design of the past. Older roads were generally wider and had inadequate surface drainage to remove water. Natural instability from past geologic activity of the Warwoman Fault has increased the potential for road erosion and mass failure. Geologic inventories conducted by the U.S. Geologic Survey indicate numerous strikes from generally north to south with dips of 35 to 75 degrees. Roads placed on south facing slopes under these conditions are especially unstable because of increased probabilities of intercepting subsurface waters.

Other poor road practices of keeping gradient constant, locating roads near streams and using a berm to prevent water movement over fill slopes had also caused accelerated erosion and sedimentation. Inventory of specific areas with active erosion or damage to fish habitat, has helped the U.S. Forest Service identify and treat specific problem areas in a cooperative effort with other agencies and individuals.

Sedimentation was reduced primarily by improving road surface drainage or armoring problem areas. Installation of broad based dips, water diversions, gravel on entrenched road sections, fences of filter fabric, drainage pipes to move water from the road to below the fill slope, seeding and fertilizing were used to prevent or reduce additional erosion and sedimentation.

Fish habitat was enhanced by placing approximately 60 fish structures in the creek for two purposes, improve cover and gravel conditions. Figures 1-12 show some examples of the types of structures that can be utilized (Rosgen and Fittante, 1990). Cover is important to trout habitat for safety and feeding. Structures improve cover by providing stable bank cover, plunge pools beneath logs and hiding places in tree roots or woody debris. These structures were immediately used by resident trout. Improved gravel conditions were provided by altering flow patterns in low gradient sections of the stream. This enabled the stream to move tons of embedded silt downstream, and expose clean gravels for spawning areas. Check dams, channel constrictors and deflectors were used to improve stream velocities by creating plunges or flow diversions.

Results suggest that fishery habitat has been improved by the reduction in sediment and increased channel cover and stream velocity in slow sections. However the number of fish have not improved all that much, because of increased pressure by fishermen.

Cooperative efforts as the Reed Creek project form the basis to improve resource conditions on the National Forest. This cooperative support is necessary help stretch the available funding and gives individuals or special interests a chance to put something back into the lands that they enjoy using.

The Reed Creek project is perhaps the classic example of a cooperative project. After the primary concerns of sedimentation and low fish habitat were identified. Followup measures of inventory, selecting treatments to meet site specific needs, and utilizing efforts of over ten partner groups helped to achieve improvement in both water quality and fishery habitat.

Fisheries and watershed improvement go hand in hand. The combination treatment of improving watershed conditions to reduce sedimentation and improve fisheries has been successful in improving trout habitat. Either practice alone would not have been nearly as successful.

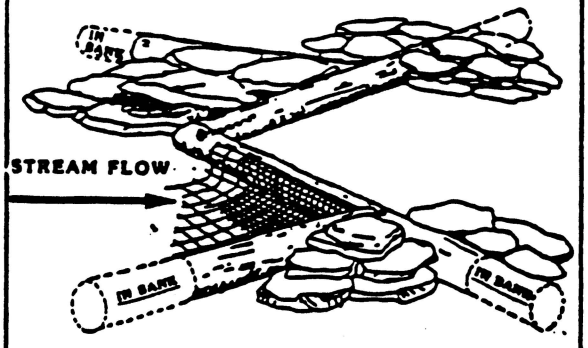

Fig. 1. Low stage check dam (Seehorn, 1985).

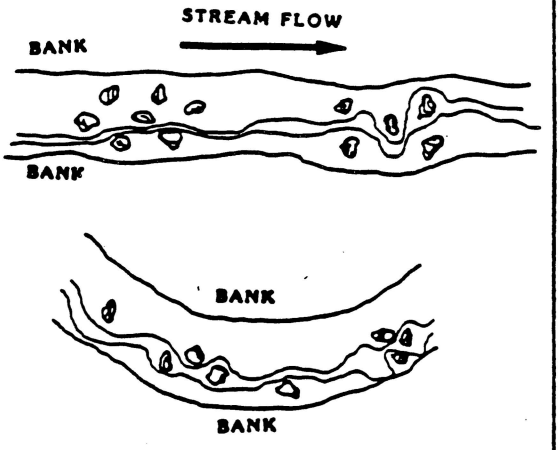

Fig. 2. Boulder placement (U.S. Dept. Transportation, 1979).

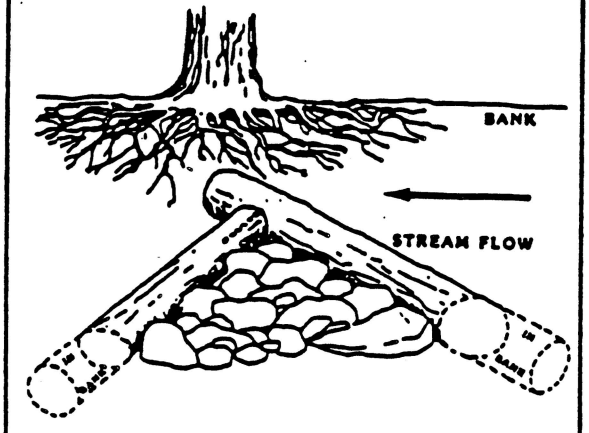

Fig. 3. Single wing deflector (Seehorn, 1985).

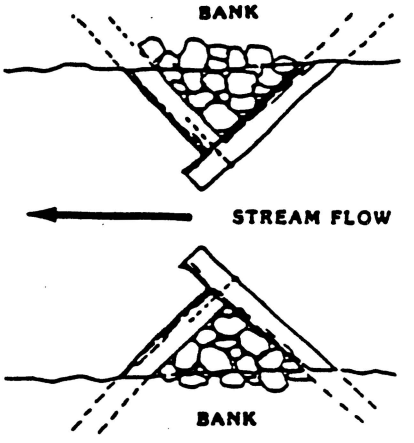

Fig. 4. Double wing deflector (Seehorn, 1985).

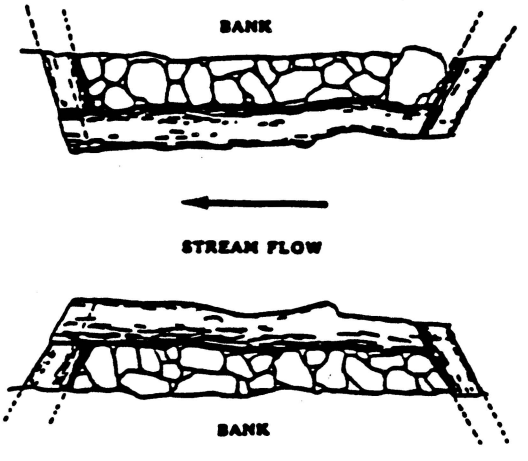

Fig. 5. Channel constrictor (Seehorn, 1985).

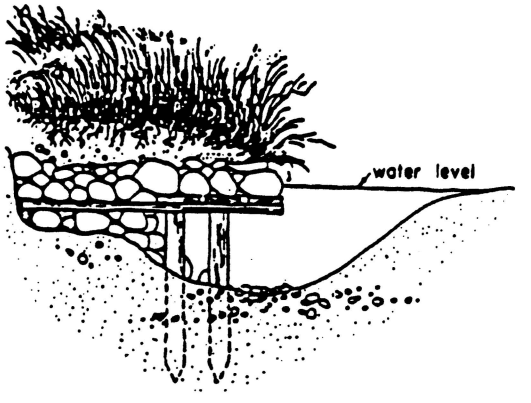

Fig. 6. Bank cover (White, 1967).

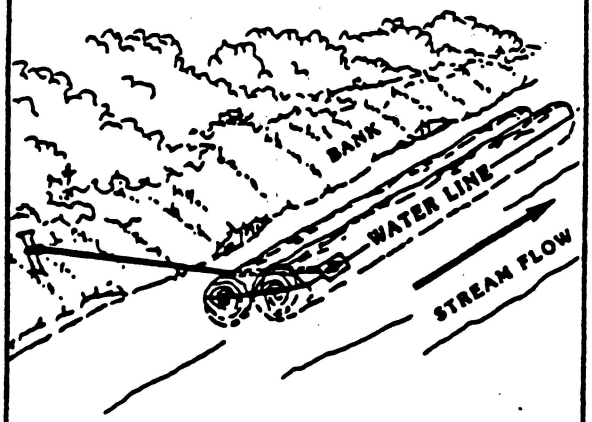

Fig. 7. Floating log cover.

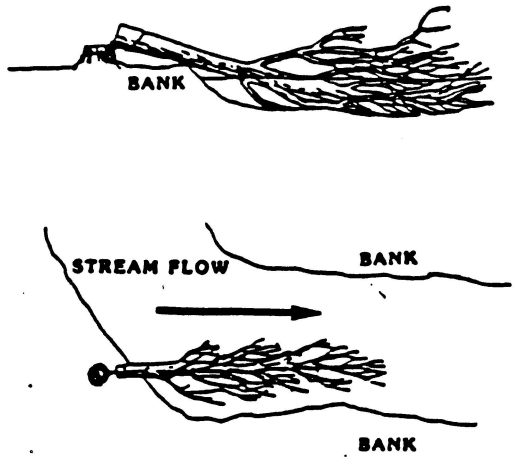

Fig. 8. Submerged sheltors (Seehorn, 1985).

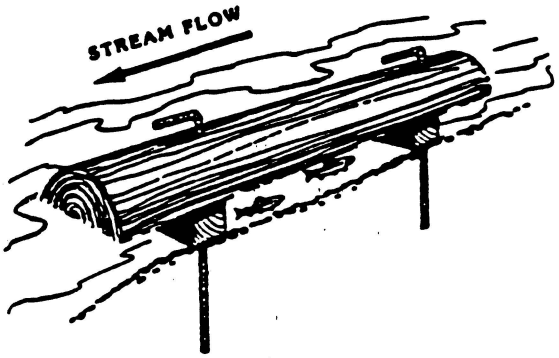

Fig. 9. Half log cover (Hunt, 1977).

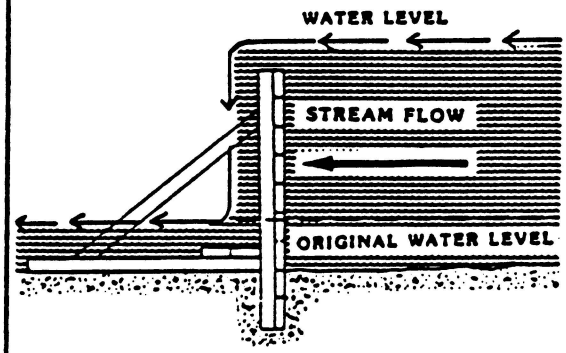

Fig. 10. Migration barrier (Culver, 1985).

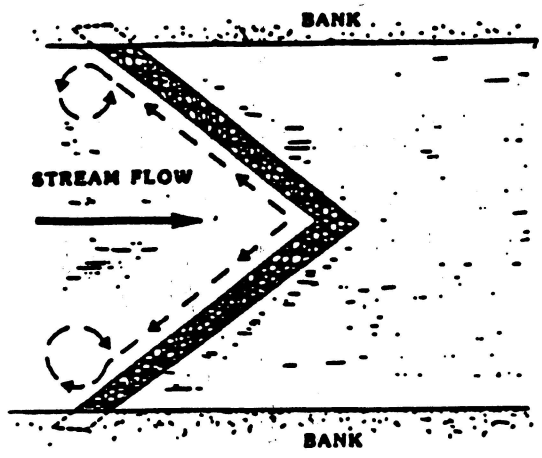

Fig. 11. V shaped gravel trap (Reeves and Roelofs, 1982).

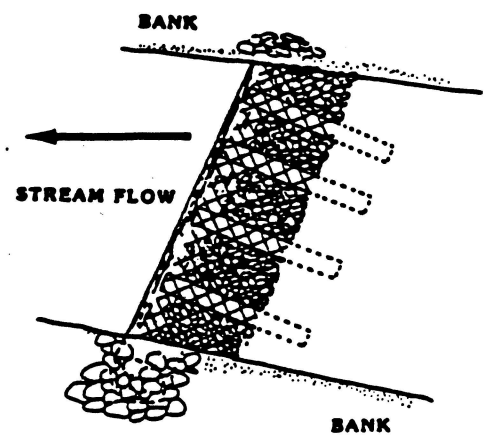

Fig. 12. Log sill gravel trap (Reeves and Roelofs, 1982).

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